

IN THE CLAIMS:

Please amend claims 1, 7, 15, and 22-24; please cancel claim 8.

This listing of claims will replace all prior versions, and listings of the claims in the application.

Listing of the claims

1. **(Currently amended)** A composition comprising:
an isolated nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; and
an isolated nucleic acid molecule that encodes one or more immunomodulating proteins [[of]] selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and ~~functional fragments thereof~~
wherein the isolated nucleic acid sequence sequences that ~~eneode~~ encodes the immunogen ~~occur~~ occurs on a separate nucleic acid molecule ~~molecules~~ from the nucleic acid sequence sequences that encode one or more immunomodulating ~~immunomodulatory~~ proteins.
2. **(Original)** The composition of claim 1 wherein said nucleic acid molecules are plasmids.
3. **(Canceled)**

4. **(Previously presented)** The composition of claim 1 wherein said immunogen is a pathogen antigen.

5. **(Original)** The composition of claim 4 wherein said immunogen is a herpes simplex antigen.

6. **(Original)** The composition of claim 5 wherein said herpes simplex antigen is HSV2gD.

7. **(Currently amended)** A composition comprising:
an isolated ~~nucleic acid molecule~~ plasmid comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, Inactive NIK, SAP K, SAP-1, INK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, ~~OX40~~, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2; and ~~and functional fragments thereof.~~
a separate plasmid that encodes OX40.

8. – 9. **(Canceled)**

10. **(Previously presented)** The composition of claim 7 wherein said immunogen is a pathogen antigen.

11. **(Original)** The composition of claim 10 wherein said immunogen is a herpes simplex antigen.

12. **(Original)** The composition of claim 11 wherein said herpes simplex antigen is HSV2gD.

13. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 1.

14. **(Previously presented)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a composition of claim 1.

15. **(Currently amended)** A composition comprising:
a recombinant vaccine comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate, ~~a~~ nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, I κ B, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NF κ B, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, ~~Ox40~~, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof; and
a separate nucleic acid molecule that encodes OX40;
wherein said recombinant vaccine is a recombinant vaccinia vaccine.

16. **(Canceled)**

17. **(Previously presented)** The recombinant vaccine of claim 15 wherein said immunogen is a pathogen antigen.
18. **(Previously presented)** The recombinant vaccine of claim 15 wherein the recombinant vaccine is a vaccinia vaccine.
19. **(Original)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a recombinant vaccine of claim 17.
20. – 21. **Canceled.**
22. **(Currently amended)** The composition of claim 1 wherein the isolated nucleic acid molecule that encodes one or more immunomodulating proteins encodes Ox40 ~~or a functional fragment thereof~~.
23. **(Currently amended)** The composition of claim 7 wherein the isolated nucleic acid that encodes one or more immunomodulating proteins encodes Ox40 ~~or a functional fragment thereof~~.
24. **(Currently amended)** The recombinant vaccine of claim 15 wherein the nucleotide sequence that encodes one or more immunomodulating proteins ~~encodes~~ ~~encode~~ Ox40 ~~or a functional fragment thereof~~.
25. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 7.

26. **(Previously presented)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a composition of claim 7.

27. **(Previously presented)** The composition of claim 1 wherein the isolated nucleic acid molecule that encodes one or more proteins encodes Ox40.

28. **(Previously presented)** The composition of claim 7 wherein the isolated nucleic acid molecule that encodes one or more proteins encodes Ox40.

29. **(Previously presented)** The recombinant vaccine of claim 15 wherein the nucleotide sequence that encodes one or more proteins encode Ox40.

30. **(Previously presented)** The composition of claim 1 wherein the composition comprises:

an isolated nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; and

an isolated nucleic acid molecule that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IκB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFκB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2,

wherein nucleic acid sequences that encode the immunogen occur on a separate nucleic acid molecules from nucleic acid sequences that encode one or more immunomodulatory proteins.

31. **(Previously presented)** The composition of claim 7 comprising an isolated nucleic acid molecule comprising a nucleotide sequence that encodes an immunogen operably linked to

regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, Inactive NIK, SAP K, SAP-1, INK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2.

32. **(Previously presented)** The recombinant vaccine of claim 15 comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate, a nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2.